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REMARKS

The Office Action dated April 22, 2004, was carefully reviewed. Claims 1-9 and 11 have been canceled. Claim 10 has been amended and now includes the limitations of claim 11. It is respectfully requested the Examiner reconsider the present application in light of the amendments and remarks herein.

The Examiner rejected claims 1-17 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,580,916 B1 to Weisshaar et al., hereinafter Weisshaar, in view of U.S. Patent No. 5,565,858 to Guthrie.

The present invention is directed to the problem of expensive upgrades and complicated modifications that are required add long-range communication capabilities to a vehicle that is already equipped with a short-range remote-keyless entry system. Independent claim 10 of the present invention has been amended herein. Claim 11 has been canceled as it contained specific limitations relating to the gateway device that are now part of independent claim 10.

Amended claim 10 now has significant emphasis placed on the gateway device and how it interfaces with the remote long-range wireless communication system, translates a long-range coded command from the remote communication system into a short-range coded command and then communicates the short-range coded command, in its new protocol, to the short-range receiver system that is already in place on the vehicle and typically is used only with a short-range remote control transmission device.

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According to the present invention, a method is provided to modify and an existing short-range system that typically operates with a short-range remote control transmission device, hereinafter a key fob, using a gateway mounted on the vehicle that can communicate instructions from the remote long-range transmission source to the short-range system. The gateway does not place any new restrictions on the existing short-range system and communicates with the short-range receiver in the same way that the remote key fob uses to communicate with the short-range receiver. The present invention is both portable and cost effective. The gateway can be easily installed, and then moved to another vehicle if desired, with minimal physical connections to the vehicle. This advantage makes it useful to fleet and service vehicles.

According to the present invention, the gateway device is mounted on the vehicle and requires only power and ground connections. It communicates with an existing short-range receiver that is already on the vehicle. The short-range receiver is already hard-wired to several functions of the vehicle as it is already in place to control these functions using commands received from the key fob. The gateway on the vehicle expands the range of the vehicle's remote key fob functions without having to tap into the vehicle's electrical system. The gateway device on the vehicle can communicate with the short-range receiver in the same way the key fob would typically communicate with the short-range receiver. However, according to the present invention, the gateway device is capable of receiving instructions

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from a remote long-range transmitter and translating those instructions into a protocol that can be handled by the short-range receiver.

In the method of the present invention the gateway device receives a long-range coded command from a long-range transmitter, such as an Internet, cellular phone or satellite transmission. The gateway device translates the long-range coded command into a short-range coded command having a communication protocol that is compatible with the existing short-range receiver on the vehicle. Once translated into the new protocol, the long-range coded command received by the gateway device from the long-range communication device can be delivered to the short-range receiver as a short-range coded command in the same way that the short-range receiver would receive the command from the key fob.

Because the gateway device is mounted in close proximity to the short-range receiver it can communicate with the short-range receiver using an RF signal, and does not require hard-wire connections to the short-range receiver. The gateway device communicates the short-range coded command to the short-range receiver using a radio frequency, such as 315 MHz, and the short-range receiver controls the functions it is wired to. The gateway device does not need to be wired to anything on the vehicle other than a power and a ground connection.

The gateway device uses the same communication protocol as the key fob to communicate the short-range coded commands to the short-range receiver. The short-range receiver is already in communication with the

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functions that it is designed to control as it is hardwired to control them. Therefore, it is now capable of receiving instructions from either the key fob in the traditional way or from a long-range wireless transmission source via the vehicle's gateway device.

In a simple, cost effective manner the present invention increases the range of remote control functions on the vehicle from tens of meters using the short-range key fob to a virtually limitless range using a long-range wireless transmission source. There is no need for complex wiring connections or an intermediate communication provider to decipher and implement the commands.

As discussed in the previous response, filed March 8, 2004, Weisshaar does not teach or disclose a gateway device that receives a coded signal from a long-range wireless communication device, translates the coded signal into a different communication protocol, and then communicates the translated signal to the short-range receiver. The Examiner asserted that combining Weisshaar with Guthrie would result in the applicants' invention. It is respectfully asserted that Guthrie does not teach translating a command from long-range to short-range protocol and that Guthrie does not teach using the short-range receiver to control a function. Therefore, the combination of Weisshaar and Guthrie would not result in the present invention.

The Guthrie reference is directed to the problem of tracking and locating nested storage bins. Guthrie proposes a device which locates a container from a group of containers using an electronic tag system. The

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electronic tags are capable of both long-range and short-range communication because each tag contains both a long-range transceiver and a short-range transceiver. The long-range transceiver and short-range transceiver on the same tag do not communication with each other. They communicate with long-range and short-range transceivers on other tags. The short-range transceiver of one tag communicates with the long-range transceiver of another tag to assist in locating a container relative to other containers and vice-versa.

In order to avoid confusion between tags, and for the locating system of Guthrie to work properly, the commands for long-range and short-range master and slave tags must be different. The master interrogation command is a long-range protocol, and the slave response signal is a short-range protocol. These are two separate and distinct commands. The tags are not translating a single command from a long-range protocol into a short-range protocol as taught by the present invention. Guthrie teaches the use of interrogation signals and response signals. It is respectfully asserted that Guthrie teaches sending master and slave signals, but does not teach or disclose translating a command from one communication protocol into another communication protocol.

Additionally, in Guthrie, the short-range portion of the antenna is configured to communicate with the long-range portion of adjacent antennas of other electronic tags. In the present invention, the short-range receiver is configured to receive the translated command, at a short-range frequency,

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from the gateway device and a key fob, and only the gateway device communicates with the long-range receiver. In the Guthrie reference the long-range transceiver of each tag communicates with the short-range transceiver of an adjacent tag or with the interrogator unit.

Further, Guthrie does not teach or disclose a translated signal that is used to control the operation of a vehicle function as taught by the applicants of the present invention. In Guthrie, when the short-range receiver receives a master interrogation signal, it responds only by sending out a slave response signal to be received by the interrogator unit. The present invention uses a translated command to control the operation of a vehicle function by way of the short-range receiver being hard-wired to several vehicle functions.

Another major difference between Guthrie and the present invention is that the status of the tags, master and slave, can be reversed by receiving an "unslaved" command. In the present invention, neither the gateway device nor the short-range receiver in the present invention can be interchangeable. The devices must remain in their fixed configurations in order for the present invention to perform its intended function. The gateway has long-range receiving capabilities and short-range transmission capabilities. The short-range receiver is capable of receiving only short-range commands and is hard-wired to the devices it is being commanded to operate.

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The Examiner also referenced Namekawa, Tompkins et al. and Garnault references as being of interest to the present invention, but not cited in the Office Action dated April 22, 2004. It is respectfully asserted that the present invention is easily distinguished from these references.

The Namekawa reference is directed to a method for identifying operation modes of an anti-theft system. In Namekawa, an incoming telephone call is used to check the anti-theft system. When an incoming call arrives during the power-on state, and a predetermined ID code has been entered, the status of one or more operating modes of the anti-theft system is checked. Several units, such as a sensor unit, an operating unit, and a transceiver unit, communicate with a control unit. The control unit is wired to sensors at each unit and monitors each unit. The control unit can receive and incoming call to check the status and when an ID code is entered upon answering the incoming call, the status of any unit can be communicated to the caller. Namekawa does not have a gateway device in wireless communication with the short-range receiver that receives a long-range coded command, translates that command in to a short-range protocol that the short-range receiver uses to control a specific function.

The Tompkins et al. reference is directed to a luggage tracking system. Tompkins teaches a beeper is attached to each luggage piece and can be tracked to identify the luggage and its location. The beeper unit receives an RF signal. If that signal corresponds to the number and tone that is unique to that beeper unit, the beeper unit responds with an audible signal.

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Specifically, if a piece of luggage is missing, a call is made to a control center. The control center uplinks a signal having a code that corresponds to the missing beeper unit to a geosynchronous satellite. The satellite downlinks the data to a series of ground relay stations. The ground relay stations send the page to local transmitters at each airport. If the beeper unit is at the airport, it will receive the local signal and emit an audible signal.

The Tompkins et al. reference can be distinguished in that it depends on a relay station to receive the satellite transmission, and then the relay station sends a command to all of its local transmitters. The local transmitters send out the signal to the many short-range beepers and only the beeper unit that has the corresponding code responds by presenting an audible signal. In the present invention, the gateway receives a long-range coded command directly from the long-range wireless transmission source and translates that command into a protocol that the short-range receiver can accept.

The Garnault reference is directed to unlocking and/or opening openable members of a vehicle using an automatically actuated remote control. Garnault teaches at least two antennas at different locations on the vehicle. A transponder, such as a key fob, is used to issue instructions to the control unit to lock/unlock/open/close an openable member on the vehicle. A short-range transmitter receives the command from the transponder and instructs the control unit to operate the vehicle function. However, Garnault is directed to short-range only. It does not teach or disclose a gateway that is

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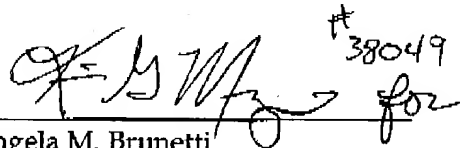
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capable of receiving long-range coded commands and translating them into short-range coded commands for the short range-receiver.

It is respectfully requested that the Examiner withdraw the rejection of the claims 10 and 12-17 under 35 U.S.C. § 103.

Should the Examiner have any questions, comments or suggestions that may place the claims into better condition for allowance, he is respectfully requested to call the undersigned attorney.

Respectfully submitted,

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